Avocent

LongView® Wireless

Installer/User Guide

INSTRUCTIONS
This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

DANGEROUS VOLTAGE
This symbol is intended to alert the user to the presence of uninsulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

PROTECTIVE GROUNDING TERMINAL
This symbol indicates a terminal which must be connected to earth ground prior to making any other connections to the equipment.

LongView® Wireless
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USA Notification

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Canadian Notification

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le Ministère des Communications du Canada.

Agency Approvals

FCC class A, UL, cUL

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Product Overview

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Chapter 1: Product Overview

Features and Benefits

Avocent's LongView® Wireless Extender connects Keyboard, Video, Mouse (KVM) and audio peripherals wirelessly to your computer, from up to 100 feet away. LongView Wireless is a digital system that processes analog video, inbound and outbound, utilizing a unique, proprietary compression engine. At the heart of the compression engine is a multimedia DSP and an FPGA that are coupled to an IEEE 802.11a radio board.

Its industry standard design makes LongView Wireless compatible with virtually any PC, display technology and operating system. Installation is essentially Plug and Play requiring no new drivers or software.

Figure 1.1: LongView Wireless Model

The LongView Wireless On-Screen Display (OSD)

The LongView Wireless OSD makes it simple to set up and adjust your video parameters. Accessed from the receiver side, the OSD makes tuning your video fast and convenient.
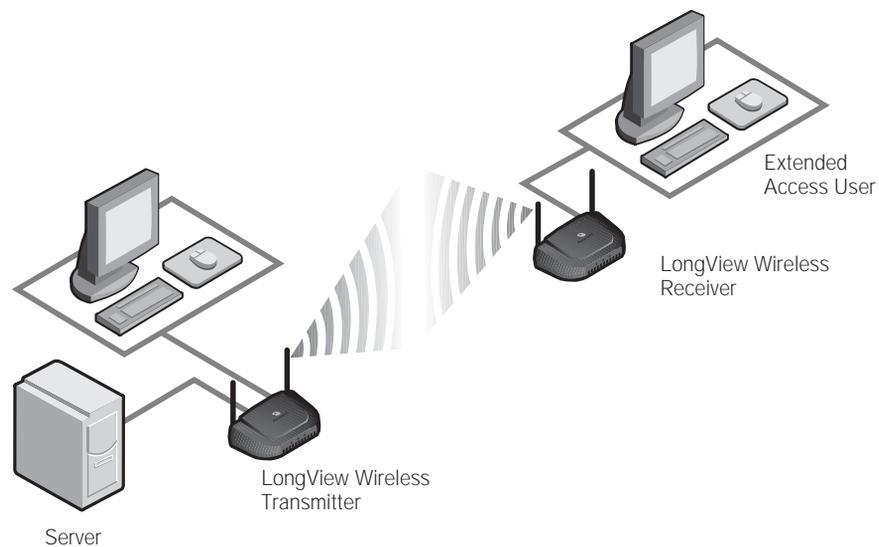
Figure 1.2: Example LongView Wireless Configuration

Secure connectivity and 802.11a standards-based design

Advanced Encryption Standard (AES) provides secure connections through a proprietary design based on the 802.11a standard.

The LongView Wireless transmitter

The LongView Wireless transmitter connects directly to your computer and serves as the radio interface device enabling the computer to transmit audio and video data. It also acts as the receiver for keyboard and mouse data sourced from extended devices. The LongView Wireless transmitter contains five chassis-mounted connectors for local video, keyboard and mouse peripherals, in addition to power and audio in from the computer. It includes a 3.5 foot cable with video and PS/2 keyboard and mouse connectors. Power is supplied to the transmitter from a universal input 12 V DC switching power supply (included).

The LongView Wireless receiver

The LongView Wireless receiver connects directly to your user interface devices (keyboard, video monitor and mouse) and serves as the radio interface device for these components. It receives audio and video data from the source computer and sends keyboard and mouse data from the user interface devices to the source computer. The LongView Wireless receiver has five chassis-mounted connectors for video, keyboard, mouse and audio peripherals and power. Power is supplied to the transmitter from a universal input 12 V DC switching power supply (included).

Compatibility with Peripherals

The LongView Wireless is compatible with the following peripherals:

- Keyboard- The LongView Wireless transmitter and receiver support virtually any standard PS/2 keyboard.

- Mouse- The LongView Wireless transmitter and receiver support 2-button PS/2 mice. Mice that have more than two buttons work with the reduced functionality of a 2-button mouse.

- Video- The LongView Wireless Extender supports VGA, SVGA and XGA resolutions up to 60 Hz refresh rate. Both CRT and LCD monitors with standard 15-pin high density connectors are supported.

- Audio- Speakers and headphones with 3.5 mm audio plugs are supported on the receiver side of your LongView Wireless Extender, provided the transmitter has been connected to the sound card of your PC with the provided audio cable.

Safety Precautions

To avoid potential video and/or keyboard problems when using Avocent products:

- If the building has 3-phase AC power, ensure that the computer and monitor are on the same phase. For best results, they should be on the same circuit.

- Use only Avocent-supplied cable to connect computers and KVM switches. Avocent warranties do not apply to damage resulting from user-supplied cable.

To avoid potentially fatal shock hazard and possible damage to equipment, please observe the following precautions:

- Do not use a 2-wire extension cord in any Avocent product configuration.

- Test AC outlets at the computer and monitor for proper polarity and grounding.

- Use only with grounded outlets at both the computer and monitor. When using a backup Uniterruptible Power Supply (UPS), power the computer and the LongView Wireless transmitter unit off the supply.

NOTE: The AC inlet is the main disconnect.

2 *Installation*

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Chapter 2: Installation

Getting Started

Before installing your LongView Wireless Extender, refer to the list below to ensure that you have all the items that shipped with the LongView Wireless.

Supplied with the LongView Wireless Extender

Your LongView Wireless package contains the following items:

- LongView Wireless transmitter
- LongView Wireless receiver
- Two local country power supplies
- Audio cable
- LongView Wireless Installer/User Guide
- LongView Wireless Quick Installation Guide

Installing a LongView Wireless Extender

Follow the step-by-step procedures listed in the *To install a LongView Wireless transmitter* and *To install a LongView Wireless receiver* sections to properly install your new KVM extension system.

WARNING: To reduce the risk of electric shock or damage to your equipment -
- Disconnect the power from the unit by unplugging the power supply from the electrical outlet.

To install a LongView Wireless transmitter:

1. Ensure that the video setting of your computer is 1024 x 768, 800 x 600 or 640 x 480 at 60 Hz refresh rate. Best performance will be achieved if the color resolution is set to 24 bit color or higher.

2. Power down the computer that will be part of your LongView Wireless Extender.

3. Unplug the peripherals (keyboard, mouse, monitor and speakers with built-in amplifiers, if applicable) from your computer.
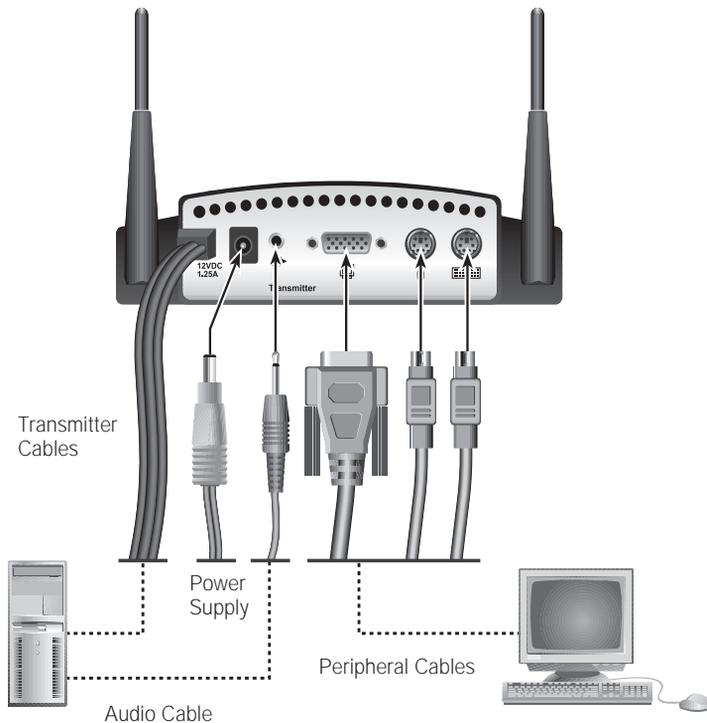

Figure 2.1: LongView Wireless Transmitter Installation Example

4. Prepare locations for your LongView Wireless equipment, computer and peripherals. Place the transmitter near your computer. Best performance is achieved when the antennas are clearly visible and free from obstructions.

5. Connect the LongView Wireless transmitter cables into the computer's PS/2 keyboard (purple connector), PS/2 mouse (green connector) and monitor connections (blue connector).

6. Using the supplied audio cable, connect one end to the LongView Wireless transmitter's audio input connection (lime green connector) and the other end to the computer's audio output connection (lime green connector).

7. Connect your LongView Wireless transmitter to an AC power source with one of the power supplies included with your LongView Wireless Extender.

NOTE: The transmitter must be powered up before the computer.

**NOTE:** Use only an Avocent-supplied power supply.

8. Power up your computer.

Connecting the LongView Wireless receiver

Virtually any industry-standard display device can be attached to the LongView Wireless receiver, as long as it has a 15-pin D shell connector for video input and can accept VGA (640 x 480), SVGA (800 x 600) and XGA (1024 x 768) resolution video.

To install a LongView Wireless receiver:

1. Select a location for your LongView Wireless receiver. Find a convenient position for locating the LongView Wireless receiver, such as a desktop that is near your extended display. Best performance is achieved when the antennas are clearly visible and free from obstructions.

2. Connect the extended display's video input into the LongView Wireless receiver's video input (blue connector).

NOTE: The extended display must have a standard 15-pin D-shell RGB analog interface.

3. Connect the extended display's PS/2 keyboard and mouse (if applicable) into the LongView Wireless receiver's keyboard connection (purple connector) and mouse connection (green connector).

Power Supply

Audio Cable

Peripheral Cables
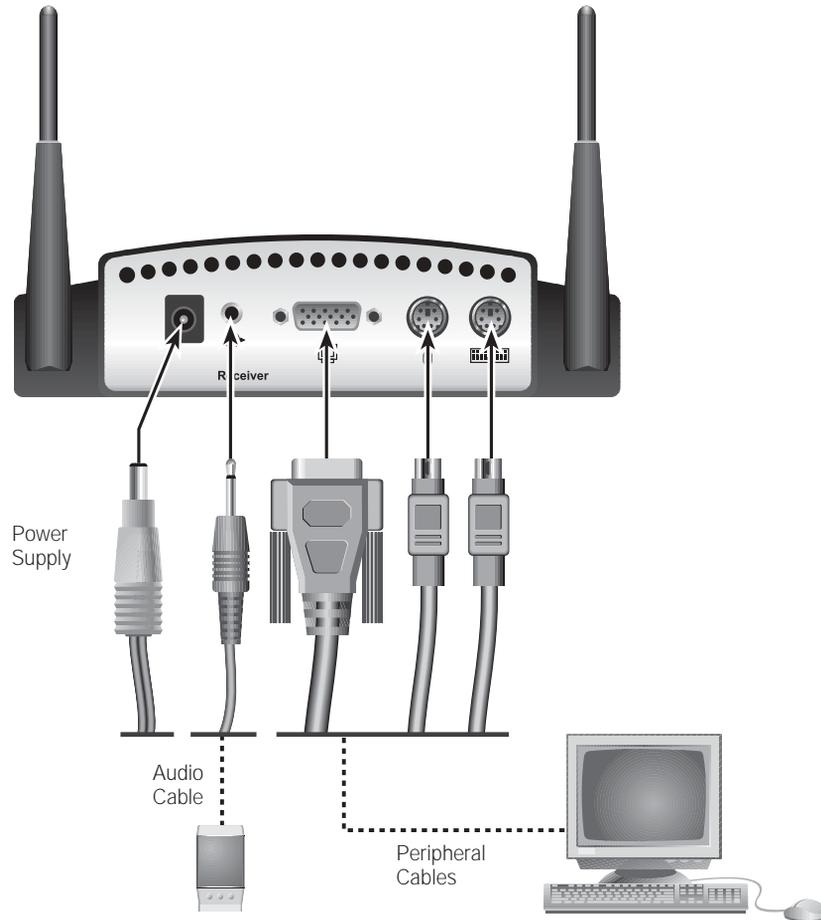
Figure 2.2: LongView Wireless Receiver Installation Example

4. Connect your speakers into the LongView Wireless receiver's audio output connection (lime green connector).

5. Connect the LongView Wireless power supply into the LongView Wireless receiver and into the AC power source.

NOTE: Use only an Avocent-supplied power supply.

6. Connect your monitor's power supply to appropriate electrical outlets.

3 Operations

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Chapter 3: Operations

Powering the LongView Wireless Extender

The LongView Wireless units (transmitter and receiver) have been factory configured to operate as a companion pair. The initial radio link between the two units is established by the receiver, although all other aspects of the link are controlled by the transmitter. Once the radio link is established, mouse, keyboard, video and audio data is free to flow between the two units.

To power up the LongView Wireless Extender:

1. Complete all of the installation steps. See Chapter 2.

2. Power up the LongView Wireless transmitter and wait for the middle LED marked as *S2* to illuminate.

3. Power up the monitor attached to the LongView Wireless receiver.

4. Power up the LongView Wireless receiver.

5. Power up your computer.

NOTE: Always power up the LongView Wireless transmitter and wait for the middle LED marked *S2* to illuminate before powering up your computer.

Informational Messages

When the LongView Wireless receiver is powered up, it will display a message on the computer monitor to which it is attached:

Searching for CLT_000c4116bc7b

The *000c4116bc7b* is replaced by the MAC id of the radio board in your transmitter unit. This message indicates that your receiver unit is actively searching for its companion transmitter. When it finds the companion transmitter, it will display a second message beneath the first:

Connecting to CLT_000c4116bc7b

The *000c4116bc7b* is replaced by the MAC id of the radio board in your transmitter unit. This message indicates that your receiver unit is establishing the radio link with your transmitter unit. When this link is established, both messages will be removed and the monitor will display video information from your computer.

LEDs

Both the LongView Wireless transmitter and receiver contain three LEDs visible from the front of each unit. The LEDs are labeled on the unit.

Figure 3.1: Transmitter LEDs

LED Conditions

S1	S2	PWR	Condition
OFF	OFF	ON	No Activity, Power is On
OFF	OFF	OFF	No Activity, Power is Off
OFF	ON	ON	Establish Link
ON	ON	ON	Connected

Fine-Tuning the Image Settings

Once the radio link has been established, and the monitor attached to the receiver is displaying computer generated video, some fine-tuning of the video settings may be desired. This fine-tuning should only be necessary the first time that a LongView Wireless transmitter is used with a particular computer; settings, once adjusted, are saved in the transmitter unit.

A mouse or keyboard driven menu, called the On-Screen Display (OSD), enables you to perform these adjustments. The LongView OSD allows you to use an Auto Setup feature to adjust the image settings, or enables you to manually adjust any of the individual image settings. New settings may be temporarily or permanently saved.

Main menu options

The LongView Wireless Main menu has two options- Auto Setup and Link Status. The Auto Setup checks the video parameters for your source computer and then automatically optimizes the video quality portrayed on your monitors. The Link Status indicates the signal strength of the wireless connection between your LongView Wireless transmitter and receiver.

Advanced menu options

The LongView Wireless OSD Advanced menu allows you to fine-tune the video settings that were established with the Auto Setup function. You may tune the horizontal and vertical position of the video monitor window, as well as adjust the brightness and contrast of the video image. You may also adjust the video clock phase in the LongView Wireless transmitter relative to the video clock at your source computer to assure the cleanest, sharpest video image.

Image Adjustment Using the LongView Wireless OSD

When configuring the OSD, you may use the Auto Setup function to automatically optimize the video of your LongView Wireless Extender, or you may choose to optimize it manually.

To optimize video automatically:

1. Activate the OSD Main menu on the receiver unit by pressing and holding the left **Shift** key followed by the right **Shift** key and then releasing both.

2. Optimize the video setup of your Wireless Extender by selecting *Auto Setup - Run*. This will automatically optimize your video setup parameters.

3. From the OSD Main menu, select *Finish* at the bottom to save your OSD, keyboard and Auto Setup parameters.
    -or-
    Select *Cancel* to exit without saving changes.

To optimize video manually:

If your monitor image requires further adjustment after running the Auto Setup, you may use the Advanced Setup options from the LongView Wireless OSD menu.

1. Activate the OSD Main menu on the receiver unit by pressing and holding the left **Shift** key followed by the right **Shift** key and then releasing both.

2. Select the *Advanced* tab from the OSD Main menu.

3. On the OSD Advanced menu, use the fine-tuning options to make further adjustments to your video image, as needed.
    Press the Left or Right arrows keys to make adjustments for:

    •   Horizontal Position

    •   Vertical Position

    •   Brightness

    •   Contrast

    •   Clock Phase

4. Select *Finish* at the bottom of the Main OSD menu to save the parameters.
    - or -
    If you wish to exit without saving changes, select the *Cancel* button.

Appendices

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Appendices

Appendix A: Technical Specifications

LongView Wireless Product Specifications

Mechanical		
Height	1.75" (4.45 cm) Antenna extends 4.75″ (12.07 cm) above lower surface of housing	
Width	6.25" (15.88 cm)	
Depth	5.25" (13.34 cm)	
Weight	1 lb (0.45 kg)	
Environmental/Power		
Operating Temperature	0°C to 40°C	
Storage Temperature	-20°C to 50°C	
Power Supply	12Vdc @ 1A from supplied 100 to 240 VAC 50/60 Hz switching power supply	
Multimedia		
Video Link Performance	640 x 480, 800 x 600, 1024 x 768	
Video Link Compatibility	VGA, SVGA, XGA	
Video Interface	VGA compatible with analog RGB (15-Pin D-shell), non-interlaced 60 Hz refresh rate	
Audio Support	Analog audio	
Supported Hardware		
Computer	Most standard computers with the exception of Macintosh	
Video Resolution	VGA, SVGA, XGA	
Peripherals	PS/2 keyboard, PS/2 mouse, speakers	
Radio		
Radio Protocol	IEEE 802.11a	
Radio Frequency	5150-5250; 5250-5350; 5725-5825 MHz	
Radio Modulation	OFDM (Orthogonal Frequency Division Multiplexing)	
Nominal Output Power	17dBm	
Range	XGA video resolution to 100 feet	
Security	AES encryption with 802.1x authentication	
Regulatory Compliance Standards		
FCC Class A, UL, cUL		

Appendix B: Technical Support

Our Technical Support staff is ready to assist you with any installation or operating issues you encounter with your Avocent product. If an issue should develop, follow the steps below for the fastest possible service:

1.   Check the *Troubleshooting* section of this manual to see if the issue can be resolved by following the procedures outlined. See *Appendix C*.

2.   Check our web site at www.avocent.com/support to search the knowledge base or use the on-line service request.

3.   Call Avocent Technical Support for assistance at (888) 793-8763. Visit the Avocent web site at http://www.avocent.com/support and select *Support Phone Numbers* for current phone support hours.

Appendix C: Troubleshooting

No power status light on transmitter or receiver

Verify that the green LED on the separate Avocent-supplied power supply is illuminated, indicating that the power supply is plugged in correctly.

Ensure that the power cable from the Avocent-supplied power supply is securely plugged into the LongView Wireless transmitter or LongView Wireless receiver unit.

No video on monitor attached to transmitter

Verify that the monitor has power and is switched on.

Ensure that the video cable from the LongView Wireless transmitter is securely plugged in to the correct connector on the computer.

Ensure that the video cable from the monitor is securely plugged in to the correct connector on the LongView Wireless transmitter.

Verify that the computer is switched on.

As a last check, plug the video cable from the monitor directly into the computer to verify that the monitor is working and that the computer is generating active video. If this is functioning, check that the display settings for your computer are set no higher than a resolution of 1024 x 768 at 60 Hz refresh rate. If the monitor does not function correctly, replace it.

No mouse and/or keyboard operation from peripherals attached to transmitter

Verify that the mouse and keyboard are connected to the correct PS/2 ports on the computer. Match the connector color codes (green is mouse and purple is keyboard).

If the LongView Wireless transmitter was powered up after the computer, turn off the computer and transmitter. Power up the LongView Wireless transmitter unit, wait for the middle LED to illuminate, then power up the computer.

Retest the mouse and keyboard by connecting them directly to the computer and rebooting the computer. If one does not function correctly, replace the non-functioning peripheral.

No video on monitor attached to receiver

Verify that the monitor attached to the LongView Wireless receiver has power and is switched on.

Ensure that the video cable from the monitor is securely plugged in to the correct connector on the LongView Wireless receiver.

Ensure that the video cable from the LongView Wireless transmitter is securely plugged in to the correct connector on the computer.

Verify that the computer is switched on.

Cycle power to the LongView Wireless receiver. An informational message should appear on the monitor for a brief moment. If the message does not appear, check the monitor by plugging the video cable from the monitor directly into the computer to verify that the monitor is working and that the computer is generating active video. If this is functioning, check that the display settings for your computer are set no higher than a resolution of 1024 x 768 at 60 Hz refresh rate. If the monitor does not function correctly, replace it.

Verify that all three LEDs on both the LongView Wireless transmitter and the LongView Wireless receiver are illuminated a short period of time after power up (30 seconds or less). If all three LEDs are not illuminated, move the LongView Wireless receiver closer to the LongView Wireless transmitter unit until all LEDs are illuminated.

As a last check, plug the video cable from the monitor directly into the computer to verify that the monitor is working and that the computer is generating active video. If this is functioning, check that the display settings for your computer are set no higher than a resolution of 1024 x 768 at 60 Hz refresh rate. If the monitor does not function correctly, replace it.

No mouse and/or keyboard operation from peripherals attached to receiver

Ensure that the mouse and keyboard operation cables are connected to the correct PS/2 ports on the LongView Wireless receiver. Match the connector color codes (green is mouse and purple is keyboard).

Ensure that the mouse and keyboard cables from the LongView Wireless transmitter are connected to the correct PS/2 ports on the computer. Match the connector color codes (green is mouse and purple is keyboard).

Verify that all three LEDs on both the LongView Wireless transmitter and the LongView Wireless receiver are illuminated a short period of time after power up (30 seconds or less). If all three LEDs are not illuminated, move the LongView Wireless receiver closer to the LongView Wireless transmitter unit until all LEDs are illuminated.

Retest the mouse and keyboard by connecting them directly to the computer and rebooting the computer. If one does not function correctly, replace the non-functioning peripheral.

No audio from speakers attached to receiver

Ensure that the audio cable is securely plugged into the line in port of the LongView Wireless transmitter unit.

Ensure that the audio cable is securely plugged into the line out port of the computer (should be color coded green).

Ensure that the speaker cable is securely plugged into the line out port of the LongView Wireless receiver unit.

Verify that all three LEDs on both the LongView Wireless transmitter and the LongView Wireless receiver are illuminated a short period of time after the power up (30 seconds or less). If all three LEDs are not illuminated, move the LongView Wireless receiver closer to the LongView Wireless transmitter unit until all LEDs are illuminated.

Retest the speakers by connecting them directly to the computer. If they do not function correctly, replace them.

Poor video quality on monitor attached to receiver

Run Auto Setup from the OSD. Remember to click *Finish* to save new settings.

Ensure that the video cable from the monitor is securely plugged in to the correct connector on the LongView Wireless receiver.

Ensure that the video cable from the LongView Wireless transmitter is securely plugged in to the correct connector on the computer.

Slow response from peripherals attached to LongView Wireless receiver

Run Auto Setup from the OSD. Remember to click *Finish* to save new settings.

The distance between the two LongView Wireless units may be too great, reducing the quantity of data that can be sent through the radio link. Move the LongView Wireless receiver closer to the LongView Wireless transmitter.

Appendix D: Understanding Wireless

Wireless technology is being used in many innovative ways to help people work and communicate more efficiently. Increased mobility and the absence of cabling and other fixed infrastructure have proven to be beneficial for many users.

People use wireless technology for many different purposes:

- Mobility – productivity increases when people have access to data in any location within the operating range of their Wireless Extender. Management decisions based on real-time information can significantly improve worker efficiency.

- Low Implementation Costs – Wireless Extenders are easy to set up, manage, change and relocate. Environments that change frequently benefit from the ease of implementing wireless. Wireless Extenders operate in locations where installation of wiring may be impractical.

- Installation and Network Expansion – installing a Wireless Extender can be fast and easy and can eliminate the need to pull cable through walls and ceilings. Wireless technology allows the network to go where wires cannot go – even outside the home or office.

Standards-based technology

The LongView Wireless transmitter and receiver utilize a proprietary design based on the 802.11a standard. The IEEE 802.11a standard is an extension of the 802.11b standard. It increases the data rate up to 54 Mbps within the 5 GHz band, utilizing OFDM technology.

This technology works by transmitting high-speed digital data over a radio wave utilizing OFDM technology. OFDM works by splitting the radio signal into multiple smaller sub-signals that are then transmitted simultaneously at different frequencies to the receiver. OFDM reduces the amount of crosstalk (interference) in signal transmissions.

Installation considerations

The LongView Wireless Extender allows you to access your computer using a wireless connection from virtually anywhere within its operating range. Keep in mind, however, that the number, thickness and location of walls, ceilings and other objects that the wireless signals must pass through may limit the range. Typical ranges vary depending on the types of materials and background RF (radio frequency) noise in your home or business.

To maximize your wireless range:

1. Keep the number of walls and ceilings between the transmitter and receiver to a minimum – each wall or ceiling can reduce your wireless product's range.

2. Be aware of the direct line between your transmitter and receiver. A wall that is 1.5 feet thick (.5 meters), at a 45° angle appears to be almost 3 feet (1 meter) thick. At a 2° angle, it looks over 42 feet (14 meters) thick! Position your devices so that the signal will travel straight through a wall or ceiling for better reception.

3. Building materials can impede the wireless signal – a solid metal door or aluminum studs may have a negative effect on range. Try to position your wireless devices and computers with wireless adaptors so that the signal passes through drywall or open doorways and not other materials.

4. Keep your LongView Wireless transmitter and receiver away (at least 3 to 6 feet or 1 to 2 meters) from electrical devices or appliances that generate extreme RF noise.

LIMITED WARRANTY

Avocent Corporation warrants to the original retail purchaser that this product is and will be free from defects in materials and workmanship for a period of 24 months from the date of purchase.

Additionally, all Avocent products carry an unconditional thirty-day satisfaction guarantee. If, for any reason, you are dissatisfied with the performance of this product, you may return it to the point of purchase for a refund of the purchase price (excluding shipping charges). This guarantee does not apply to special order products, and may not be available through all resellers. During the warranty period, purchaser must promptly call Avocent for a RETURN MATERIALS AUTHORIZATION (RMA) number. Make sure that the RMA number appears on the packing slip, proof of purchase, AND ON THE OUTSIDE OF EACH SHIPPING CARTON. Unauthorized returns or collect shipments will be refused.

Ship prepaid to: Avocent Corporation
                          4991 Corporate Drive
                          Huntsville, AL 35805 U.S.A.
                          Telephone: (256) 430-4000

The above limited warranty is voided by occurrence of any of the following events, upon which the product is provided as is, with all faults, and with all disclaimers of warranty identified below:

1. If non-Avocent approved cabling is attached to the unit. Poorly constructed and miswired cabling can diminish video quality and damage equipment. Avocent manufactured cabling is built to high quality standards utilizing overall braided shield to comply with FCC emission standards, and each cable is individually tested under load.
2. If defect or malfunction was caused by abuse, mishandling, unauthorized repair, or use other than intended.
3. If unauthorized modifications were made to product.
4. If unreported damages occurred in any shipment of the product.
5. If damages were due to or caused by equipment or software not provided by Avocent.
6. If the unit is used with non-grounded or incorrectly polarized AC power.
7. If the product is used in contradiction to any instruction provided by any User Guide or Instruction Sheet provided to you or with the product.
8. If the product is damaged due to power surges, water exposure or act of God including lightning.

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Avocent

The Power of Being There.

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